ORDER NO. SD81061943C8

Service Manual

Turntable System

SL-D303

[E], [EK], [XL], [EG], [EB], [EF], [XA], [XM], [EH], [Ei], [EC]

SL-D303(K)

[E], [EK], [XL], [EG], [EB], [EF], [XA], [XM], [EH], [Ei], [EC]

Areas

- * [E] is available in Switzerland and Scandinavia.
- * [EK] is available in United Kingdom.
- * [XL] is available in Australia.
- * [EG] is available in F.R. Germany.
- * [EB] is available in Belgium.
- * [EF] is available in France.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XM] is available in Central South America.
- * [EH] is available in Holland.
- * [Ei] is available in Italy.
- * [EC] is available in Czechoslovakia.

*** The colors of this model include silver and black.**
*** The black type model is provided with (K) in the Service Manual.**

English

Specifications

Specifications are subject to change without notice for further improvement.
Weight and dimensions shown are approximate.

■ General

Power supply:	~110-120/220-240V, 50 or 60 Hz
Power consumption:	7 W
Dimensions: (W×H×D)	43 × 10.6 × 37.5 cm (16-15/16" × 4-3/16" × 14-3/4") {Maximum height when top (dust cover) is open. 43 × 37 × 42 cm (16-15/16" × 14-9/16" × 16-17/32")}
Weight:	6 kg (13.2 lb.)

■ Turntable section

Type:	Direct drive Automatic turntable Auto start Auto return, Auto stop Manual play Repeat play
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	F·G servo control
Turntable platter:	Aluminum die-cast Diameter 31.2 cm (12-9/32 inches)
Turntable speeds:	33-1/3 rpm and 45 rpm
Pitch control:	10% adjustment range
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)

*This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble:	−56 dB (IEC 98A Unweighted) −78 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Universal tonearm "S" shaped tubular arm Static balanced type
Effective length:	230 mm (9-1/16")
Overhang	15 mm (19/32")
Tracking error angle:	Within 2°32' at the outer groove of 30 cm (12") record Within 0°32' at the inner groove of 30 cm (12") record
Offset angle:	22°
Friction:	Less than 7 mg (lateral, vertical)
Effective mass:	11 g (without cartridge)
Applicable cartridge weight range:	See page 8.
Stylus pressure adjustment range:	0—2.5 g
Headshell weight:	7.5 g
Phono cable capacitance:	135 pF

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

SL-D303

■ Cartridge section

Type:	Moving magnet
Frequency response:	10 Hz ~35 kHz 20 Hz~10 kHz ±1 dB
Output voltage:	2.5 mV at 1 kHz 5 cm/s. zero to peak lateral velocity (7 mV at 1 kHz 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation:	22 dB at 1 kHz
Channel balance:	Within 1.8 dB at 1 kHz
Compliance (dynamic):	10×10^{-6} cm/dyne at 100 Hz
Stylus pressure:	1.75 ±0.25 g (17.5 ±2.5mN)
Load impedance:	47 kΩ to 100 kΩ
Weight:	5 g (cartridge only)
Replacement stylus:	EPS-25CS Equivalent replacement stylus EPS-25ES (Elliptical stylus)

Deutsch

TECHNISCHE DATEN

Änderungen de technischen Daten vorbehalten.
Die angegebenen Gewichts- und Abmessungsdaten sind circa Werte.

■ Allgemeine Daten

Stromversorgung:	~110—120/220—240V, 50/60 Hz Wechselstrom
Leistungsaufnahme:	7 W
Abmessungen (B×H×T):	43 × 10,6 × 37,5 cm (43 × 37 × 42 cm Maximable Höhe bei geöffnetem Gehäuseoberteil)
Gewicht:	6 kg

■ Plattenspieler

Typ:	Direktantrieb Automatischer Plattenspieler Startautomatik Rückführautomatik Stopautomatik Wiederhol-Betrieb Manueller Betrieb
Antrieb:	Direktantrieb
Motor:	Kollektorloser Gleichstrommotor
Antriebsregel-Methode:	FG-Servo-Steuerung
Plattenteller:	Aluminium-Spritzguß Durchmesser 31,2 cm
Plattenteller-Drehzahlen:	33-1/3 und 45 U/min
Drehzahl-Feinregulierung:	10% Einstellbereich
Gleichlaufschwankungen:	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% Spitze (IEC 98A bewertet)

*Diese Nennleistung bezieht sich auf das Laufwerk-Bauteil allein, ausschließlich Einflüsse von Schallplatte, Tonabnehmer oder Tonarm, aber einschließlich Plattenteller. Gemessen anhand von Signalen vom eingebauten Frequenzgenerator des Motorbauteils.

Rumpel-Fremdspannungsabstand:	−56 dB (IEC 98A unbewertet)
Rumpel-Geräuschspannungsabstand:	−78 dB (IEC 98A bewertet)

■ Tonarm

Typ:	Universal-Tonarm S-förmiger Rohrtonarm Statisch ausbalanciert
Effektive Länge:	230 mm
Überhang:	15 mm
Spurfehlwinkel:	2°32' bei der Einlaufrille einer 30 cm-Platte 0°32' bei der Auslaufrille einer 30 cm-Platte
Kröpfungswinkel:	22°
Lagerreibung:	Weniger als 7 mg (horizontal, vertikal)
Effektive Masse:	11 g (ohne Tonabnehmer)
Zulässiger Tonabnehmer-Gewichtbereich:	(Vgl. seite 8)
Auflagekraft-Einstellbereich:	0—2,5 g
Tonarmkopf-Gewicht:	7,5 g
Phonokabel-Kapazitanz:	135 pF

■ Tonabnehmer

Typ:	Magnetischer Tonabnehmer
Frequenzgang:	10 Hz bis 35 kHz 20 Hz bis 10 kHz ±1 dB
Ausgangsspannung:	2,5 mV bei 1 kHz 5 cm/s. Null-zu-Spitze, lateral [7 mV bei 1 kHz 10 cm/s. Null-zu-Spitze, 45° (DIN 45 500)]
Kanaltrennung:	22 dB bei 1 kHz
Kanalabweichung:	Innerhalb 1,8 dB bei 1 kHz
Nachgiebigkeit (dynamisch):	10×10^{-6} cm/dyn bei 100 Hz
Auflagekraft:	1,75 ±0,25 g (17,5 ±2,5 mN)
Impedanz:	47 kΩ bis 100 kΩ
Gewicht:	5 g (ohne Tonarmkopf)
Ersatznadel:	EPS-25CS Gleichwertige Ersatznadel: EPS-25ES

ORDER NO. SD810719960C4

Service Manual

Turntable System

SL-D303

[PA], [PE], [PC]

SL-D303(K)

[PC]

Areas

* [PA] is available in for East PX.
* [PE] is available in European Military.
* [PC] is available in European Audio Club.

*** The colors of this model include silver and black.**
*** The black type model is provided with (K) in the Service Manual.**

Please use this manual together with the service manual for model No. SL-D303/SL-D303 (K), Order No. SD81061943C8.

Specifications

Specifications are subject to change without notice for further improvement.
Weight and dimensions shown are approximate.

■ General

Power supply:	~110-120/220-240V, 50 or 60 Hz
Power consumption:	7 W
Dimensions: (W×H×D)	43 × 10.6 × 37.5 cm (16-15/16" × 4-3/16" × 14-3/4") (Maximum height when top (dust cover) is open. 43 × 37 × 42 cm (16-15/16" × 14-9/16" × 16-17/32"))
Weight:	6 kg (13.2 lb.)

■ Turntable section

Type:	Direct drive Automatic turntable Auto start Auto return, Auto stop Manual play Repeat play
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	F·G servo control
Turntable platter:	Aluminum die-cast Diameter 31.2 cm (12-9/32 inches)
Turntable speeds:	33-1/3 rpm and 45 rpm
Pitch control:	10% adjustment range
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)

*This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble:	−56 dB (IEC 98A Unweighted) −78 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Universal tonearm "S" shaped tubular arm Static balanced type
Effective length:	230 mm (9-1/16")
Overhang	15 mm (19/32")
Tracking error angle:	Within 2°32' at the outer groove of 30 cm (12") record Within 0°32' at the inner groove of 30 cm (12") record
Offset angle:	22°
Friction:	Less than 7 mg (lateral, vertical)
Effective mass:	11 g (without cartridge)
Applicable cartridge weight range:	3.5 ~ 7.5 g
Stylus pressure adjustment range:	0—2.5 g
Headshell weight:	7.5 g
Phono cable capacitance:	135 pF

■ Cartridge section

Type:	Moving magnet stereo cartridge
Frequency response:	20 Hz to 25 kHz
Output voltage:	2.5 mV 1 kHz, 5 cm/s. zero to peak lateral velocity (7 mV 1 kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation:	22 dB 1 kHz
Channel balance:	Within 2 dB at 1kHz
Load impedance:	47 kΩ to 100 kΩ
Stylus pressure:	1.75±0.25 g (17.5±2.5 mN)
Replacement stylus:	EPS-74STSD (ATN71)

Technics

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shinbashi, Minato-ku, Tokyo 105 Japan

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

CHANGES

■ REPLACEMENT PARTS LIST

[K]-marked parts are used for black type only.

Ref. No.		Change of Part No. SL-D303/D303 (K) (ORDER NO. SD81061943C8)	Change of Part No. SL-D303/D303 (K) [PA, PE, PC]	Part Name & Description	Per Set (Pcs.)	Remarks
CAPACITORS						
C401	⚠	ECQE2A473MZ ECQU2A473MF	ECQE2A473MZ	Polyester, 250VAC, 0.047μF, ± 20%	1	
C402	⚠	ECQE2A103MZ	Deletion	Polyester, 250VAC, 0.01μF, ± 20%	0	
CABINET and CHASSIS PARTS						
25	⚠	SJA141 SJA139 SJA137	**SJA83**	AC Cord	1	
26		SFUM190–11 SFUM190–12	SFUM190–12	Bushing, AC Cord	1	
38		SFNND34S01 SFNND34G02	SFNND34P01 [PA, PE]	Name Plate	1	○
		SFNND34X01 SFNND34R01	SFNND34P02 [PC]	Name Plate	1	○
TONEARM PARTS						
65		EPC–U25S	EPC74SMAD	Cartridge	1	
		EPS–25CS	EPS74STSD	Stylus	1	
SCREW and NUT						
N24		SFCZV880O	SFPEV7803	Screw, Cartridge	2	
N26		Addition	SFPEN3302	Nut, Cartridge	2	
ACCESSORIES						
A1		SFNUD34S01 SFNUD34G01 SFNUD34X01	SFNUD34P01	Instructions Book, Printed Matter	1	○
A4		SFDK119118	Deletion	2 Pin, Plug	0	
A5		Addition	QJP0603S	Adaptor, Gimens	1	
PACKING PARTS						
P1	○	SFHPD34M01	○ SFHPD34M01	Carton Box (Silver)	1	
	○	SFHPD34C01				
	[K]	SFHPD34M21	[K] SFHPD34M21	Carton Box (Black)	1	
	[K]	SFHPD34C21				
P10		SFHDQ34X01	Deletion	Pad, Front	0	
P11		SFHDQ34X02	Deletion	Pad, Rear	0	

Printed in Japan
81070450 Ⓗ TK/YW

Français

CARACTERISTIQUES

Les spécifications sont susceptibles d'être modifiées sans préavis.
Le poids et les dimensions donnés sont approximatifs.

■ Généralités

Alimentation: Alternatif 110-120/220-240V, 50 ou 60 Hz
Consommation: 7 W
Dimensions: 43 × 10,6 × 37,5 cm
(L × H × P) (Hauteur maximum lorsque le dessus (couvercle protège-poussière) est ouvert. 43 × 37 × 42 cm)
Poids: 6 kg

■ Platine de lecture

Type: Platine automatique
Démarrage automatique
Retour automatique
Arrêt automatique
Audition à commande manuelle
Audition répétée
Système d'entraînement: Entraînement direct
Moteur: Moteur C.C. sans balai
Groupe de réglage: Servocommande du générateur de fréquences
Plateau de lecture: En aluminium moulé sous pression
Diamètre 31,2 cm
Vitesses de rotation: 33-1/3 et 45 t/p.m
Réglage d'écart: Plage de réglage de 10%
Pleurage et scintillement: 0,012% de valeur efficace*
0.025% de valeur efficace (JIS C5521)
+0,035% de crête (IEC 98A Pondéré)

*Ce régime nominal se rapporte à l'ensemble du tourne-disque seul, excluant les effets du disque, de la cellule pick-up ou du bras de lecture, mais comprenant le plateau. Mesuré par l'obtention d'un signal provenant du générateur de fréquences incorporé de l'ensemble du moteur.

Ronflement: −56 dB (IEC 98A Non pondéré)
−78 dB (IEC 98A Pondéré)

■ Bras de lecture

Type: Bras de lecture universel
Bras tubulaire en forme de "S"
De type à équilibrage statique
Longueur effective: 230 mm
Porte-à-faux: 15 mm
Angle d'erreur de piste: En deçà de 2°32' au sillon extérieur d'un disque de 30 cm
En deçà de 0°32' au sillon intérieur d'un disque de 30 cm
Angle de décalage: 22°
Frottement: Moins de 7 mg (latéral et vertical)
Masse réelle: 11 g (sans la cellule pick-up)
Gamme du poids des cellules pick-up utilisables: (Voir page 8)
Plage de réglage de la pression d'appui: 0—2.5 g
Poids de la coque porte-cellule: 7,5 g
Capacitance propre du câble pick-up: 135pF

■ Cellule pick-up

Type: Aimant mobile
Réponse en fréquence: 10 Hz à 35 kHz
20 Hz à 10 kHz ±1 dB
Tension de sortie: 2,5 mV à 1kHz; 5 cm/s., zéro à vitesse latérale de crête (7 mV à 1 kHz 10 cm/s., zéro à vitesse 45° de crête [DIN 45 500])
Séparation de canal: 22 dB à 1 kHz
Equilibrage des canaux: En deçà de 1,8 dB à 1 kHz
Elasticité (dynamique): 10×10^{-6} cm/dyne à 100 Hz
Pression de la pointe de lecture: 1,75 ±0,25 g
(17,5 ±2,5 mN)
Impédance de charge: 47 kΩ to 100 kΩ
Poids: 5 g (cellule seule)
Pointe de lecture de remplacement: EPS-25CS
Pointe de lecture de remplacement équivalente: EPS-25ES

Español

ESPECIFICACIONES

Las especificaciones quedan sujetas a cambios sin aviso previo.
El peso y las dimensiones indicados son aproximados.

■ En general

Alimentación de corriente: ~110—120/220—240 V, 50 ó 60 Hz
Consumo de corriente: 7 W
Dimensiones: 43 × 10,6 × 37,5 cm
(Ancho × Alto × Prof.) (43 × 37 × 42 cm
Altura máxima cuando la parte de arriba (tapa contra el polvo) está abierta.)
Peso: 6 kg

■ Sección del plato giratorio

Tipo: Plato giratorio automático
Arranque automático
Retorno automático
Parada automática
Ejecución manual
Ejecución repetida
Método de accionamiento: Accionamiento directo
Motor: Motor de corriente continua sin escobillas

SL-D303

Método de control de accionamiento:	Servocontrol por generador de frecuencias
Platillo del plato giratorio:	Aluminio fundido Diámetro 31,2 cm
Velocidades del plato giratorio:	33-1/3 y 45 rpm
Control de altura de sonido:	10%
Ululaciones y trémolo:	0,012% WRMS* 0,025% WRMS (JIS C5521) ±0,035% cresta (IEC 98A Ponderado)

*Estas características se refieren únicamente al conjunto del plato giratorio, con exclusión de los efectos provenientes del disco, cartucho o del brazo sonoro, incluyendo, empero, el platillo. La medida fue tomada por medio de la señal obtenida del generador de frecuencia incorporado del conjunto del motor.

Ruido de rodadura:	−56 dB (IEC 98A No ponderado) −78 dB (IEC 98A Ponderado)

■ Sección del brazo sonoro

Tipo:	Brazo sonoro universal Brazo tubular en forma de "S" Tipo equilibrado estático
Longitud efectiva:	230 mm
Proyección:	15 mm
Angulo de error de seguimiento:	Inferior a 2°32' en el surco exterior de un disco de 30 cm Inferior a 0°32' en el surco interior de un disco de 30 cm
Angulo de descentramiento:	22°
Fricción:	Menos de 7 mg (en sentido lateral y vertical)
Masa efectiva:	11 g (sin cartucho)
Radio de peso de cartucho utilizable:	(Véase en la página 8)
Radio de ajuste de la presión de la aguja:	0 a 2,5 g
Peso de la cápsula de la cabeza:	7,5 g
Capacitancia de cable de fono:	135 pF

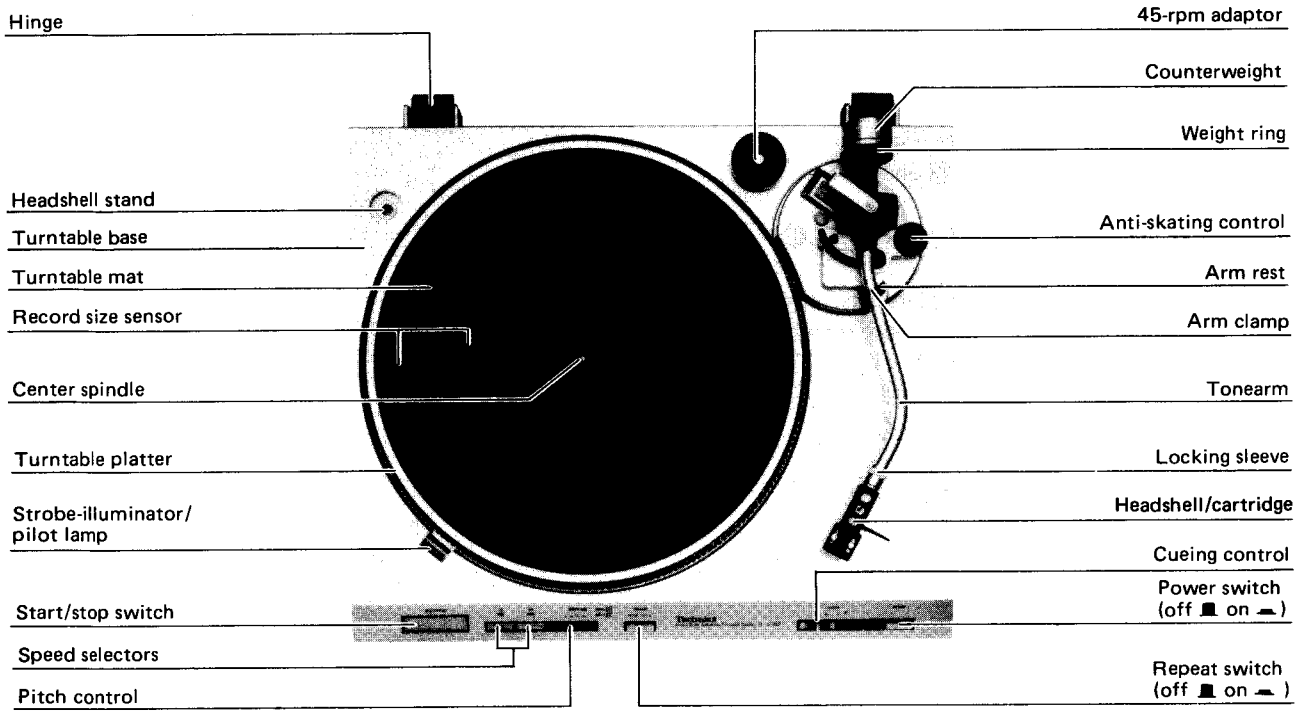
■ Sección del cartucho

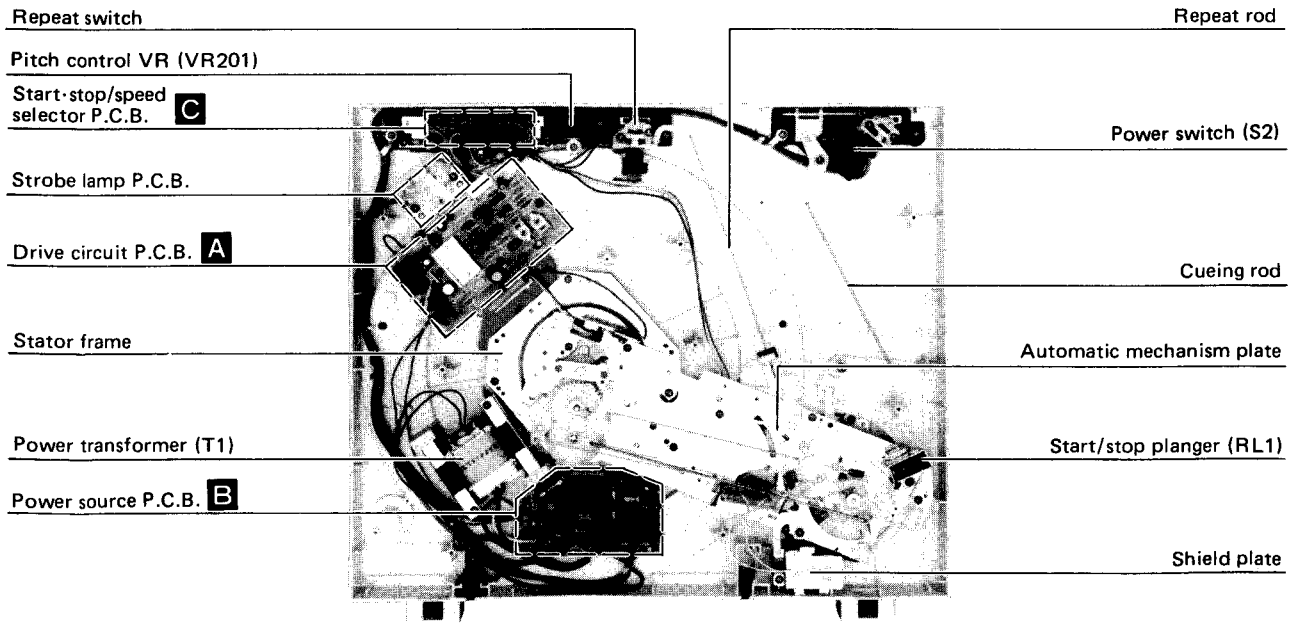
Tipo:	Imán móvil
Respuesta de frecuencia:	de 10 Hz a 35 kHz de 20 Hz a 10 kHz ±1 dB
Voltaje de salida:	2,5 mV a 1 kHz Con velocidad lateral de cero a cresta de 5 cm/s [7 mV a 1 kHz Velocidad de 45° de cero a cresta de 10 cm/s (DIN 45 500)]
Separación de canales:	22 dB a 1 kHz
Equilibrio de canales:	Sin exceder 1,8 dB a 1 kHz
Elasticidad (dinámica):	$10 + 10^{-6}$ cm/dina a 100 Hz
Presión de la aguja:	1,75 ±0,25 g (17,5 ±2,5 mN)
Impedancia de carga:	47 kΩ a 100 kΩ
Peso:	5 g (cartucho sólo)
Aguja de recambio:	EPS-25CS Aguja de recambio equivalente: EPS-25ES

■ CONTENTS

	Page
LOCATION OF CONTROLS	5
DISASSEMBLY INSTRUCTIONS	6, 7
REPLACEMENT OF HALL ELEMENT	8
CARTRIDGE INSTALLATION	8
ABOUT CARTRIDGE WEIGHT	8
MEASUREMENTS AND ADJUSTMENTS (English)	9, 10
MESSUNGEN UND JUSTIERUNGEN (Deutsch)	10, 11
MESURAGES ET RÉGLAGES (Français)	11, 12
MEDICIONES Y AJUSTES (Español)	12, 13
BLOCK DIAGRAM	14
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM	15, 16
SCHEMATIC DIAGRAM	17, 18
EXPLODED VIEWS	19, 20, 22
REPLACEMENT PARTS LIST	
Cabinet, Chassis and Packing Parts	21, 22
Electrical Parts	23
PACKINGS	24

■ LOCATION OF CONTROLS





■ DISASSEMBLY INSTRUCTIONS

• How to remove the bottom board and automatic mechanism plate

1. Fix the tonearm on the rest.
2. Remove the turntable.
3. Close the dust cover, and turn over the unit, taking care not to scratch it.
4. Remove the bottom board setscrews ❶ ~ ❼. Then, the bottom board can be removed. **(See Fig. 1)**
5. Remove the shield plate setscrews ❽ and ❾. **(See Fig. 2)**
6. Remove the regulator transistor P.C.B. setscrew ❿. **(See Fig. 2)**
7. Remove the automatic mechanism plate setscrews ⓫ ~ ⓰. Then, the automatic mechanism plate can be removed. **(See Fig. 2)**

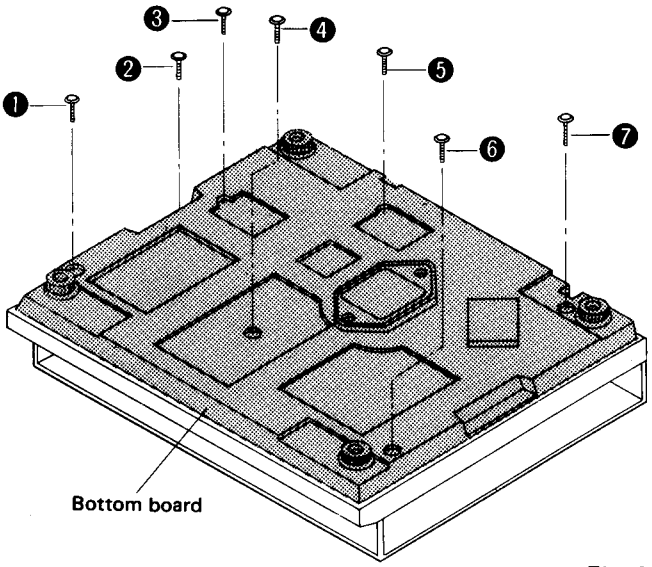


Fig. 1

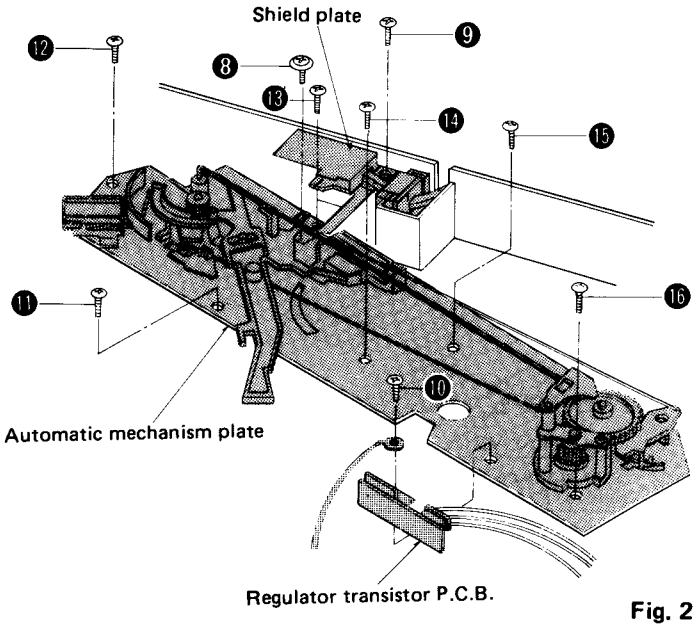


Fig. 2

• How to remove the stator frame

1. Remove the bottom board and automatic mechanism plate. **(Refer to "How to remove the bottom board and automatic mechanism plate".)**
2. Open the "lead holder" of the lead connector and pull out the lead wire of the arrow Ⓐ in **Fig. 3.**
3. Remove the stator frame setscrews ⓱ ~ ⓳. Then the stator frame can be removed. **(See Fig. 3)**

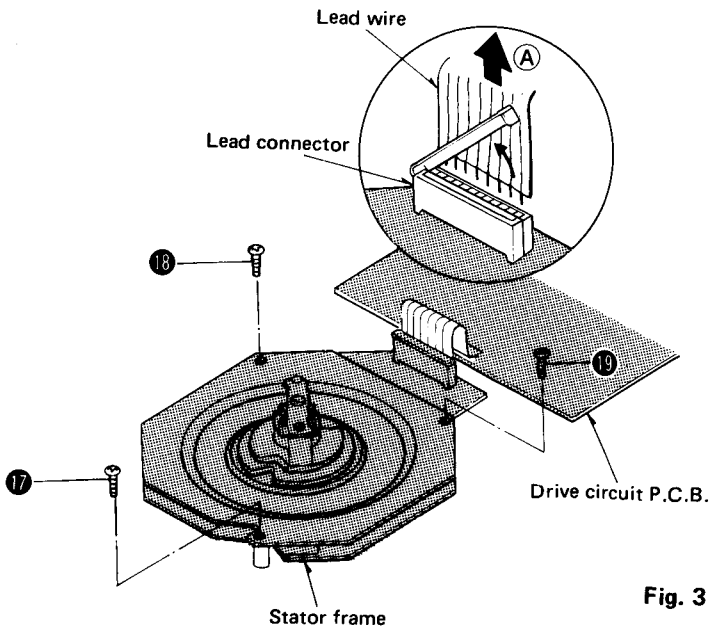


Fig. 3

• How to remove the drive circuit P.C.B.

1. Remove the bottom board. **(Refer to "How to remove the bottom board and automatic mechanism plate".)**
2. Open the "lead holder" of the lead connector and pull out the lead wire. **(Refer to "How to remove the stator frame".)**
3. Remove the drive circuit P.C.B. setscrews ⑳ ~ ㉒ and connectors ㉓ and ㉔ . Then, the drive circuit P.C.B. can be removed. **(See Fig. 4)**

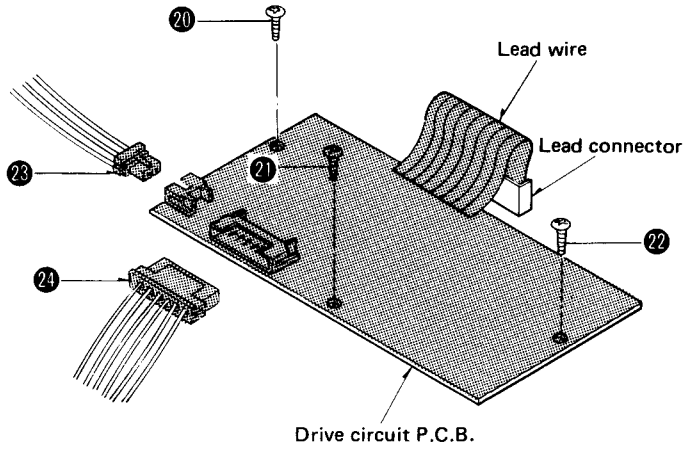


Fig. 4

• How to remove the tonearm and lift base plate

1. Remove the bottom board and automatic mechanism plate. **(Refer to "How to remove the bottom board and automatic mechanism plate".)**
2. Remove the PU fixing plate setscrew ㉕ and canceller spring. **(See Fig. 5)**
3. Unsolder the 5 lead wires from the tonearm. **(See Fig. 5)**
4. Remove the tonearm setscrews ㉖ and ㉗ . Then the tonearm can be removed. **(See Fig. 5)**
5. To disassemble the lift substrate, diseangage the arm lift fixing screw ㉘ before turning over the body, the remove the arm lift. **(See Fig. 6)**
   Note: Remove the spring under the arm lift at the same time.
6. Remove the anti-skating control knob. **(See Fig. 6)**
7. Turn over the unit and remove the PU fixing plate.
8. Remove the lift base plate setscrews ㉙ and ㉚ . Then, the lift base plate can be removed. **(See Fig. 5)**

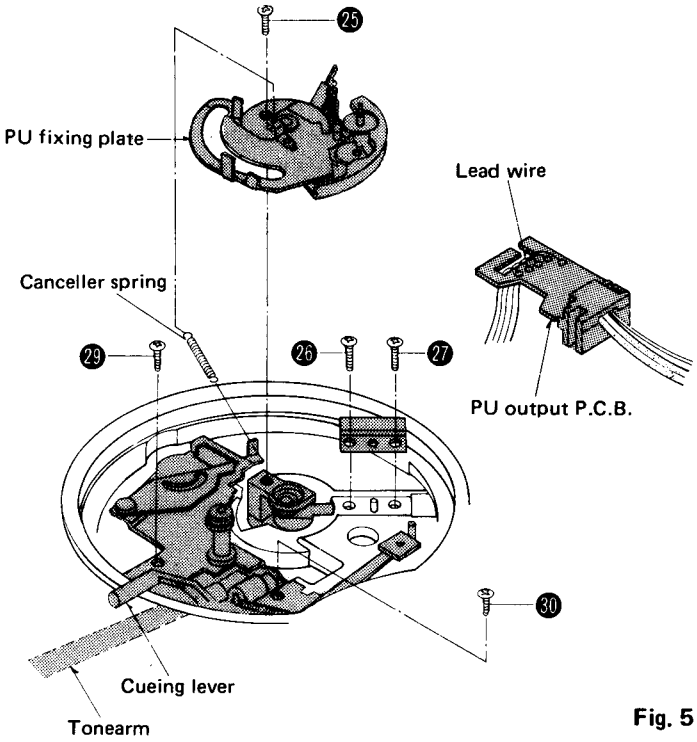


Fig. 5

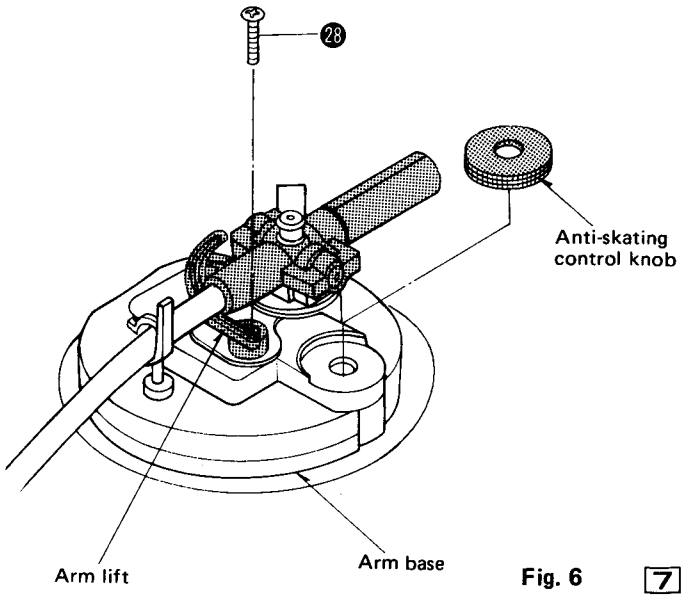


Fig. 6

■ REPLACEMENT OF HALL ELEMENT

When replacing the Hall element of the stator frame, be sure to place it with the marking side up as shown **Fig. 7.**

※ The leg position is not specified provided that the marking side is up.

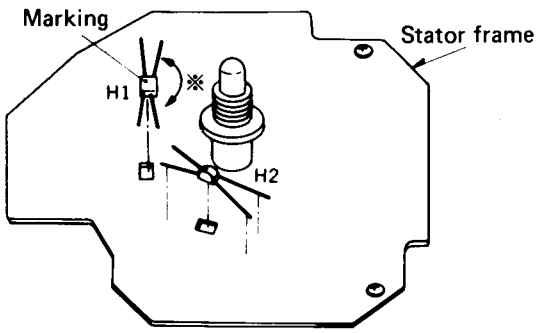


Fig. 7

■ CARTRIDGE INSTALLATION

When installing a cartridge, follow the instructions that came with the cartridge.

1. Connect the lead wires to the cartridge terminals.
   The terminals of most cartridges are color coded.
   Connect each lead wire to the terminal of the same color.
   White (L+) . . . . . **Left channel** +
   Blue (L−) . . . . . **Left channel** −
   Red (R+) . . . . . **Right channel** +
   Green (R−) . . . . . **Right channel** −
2. Mount the cartridge in the headshell using the screws provided with the cartridge. **(Fig. 8)**

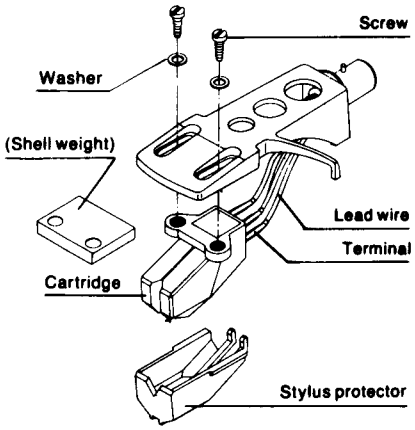


Fig. 8

■ ABOUT CARTRIDGE WEIGHT

(See chart below)

Cartridges weighing between 3.5 and 7.5 g can be used on this tonearm (with the headshell and accessory shell weight supplied).

Supplied headshell in combination with other parts.	**Allowable cartridge weight. (Included the cartridge mounting screws)** 4 g 5 6 7 8 9 10 11
A) Headshell only (7.5 g)	5 g — 7.5 g
B) + Shell weight	3.5 g — 5 g

■ MEASUREMENTS AND ADJUSTMENTS English

• Arm-lift height adjustment

The arm-lift height (distance between the stylus tip and record surface when the cueing control is set to the " ▼ " position) has been adjusted at the factory to approximately 5 mm (3/16"). **(Fig. 9)**

If the clearance is too narrow or too wide (because of different cartridge dimensions, for example), turn the adjustment screw clockwise or counterclockwise.

(See Fig. 10)

Clockwise rotation

–distance between the record and stylus tip is decreassed.

Counterclockwise rotation

–distance between the record and stylus tip is increased.

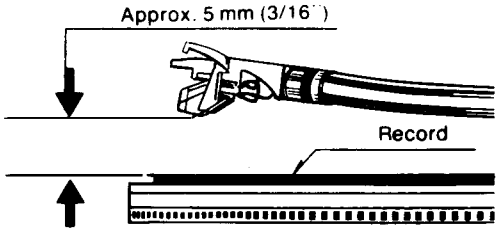


Fig. 9
(Abb. 9)

• Adjustment of automatic start position (Fig. 11)

Note:

The auto-start and auto-return adjustment screw are located together. When the tonearm is in or near the arm rest, the auto-start adjustment screw is visible; **(See Fig. 11)** when the tonearm is near the center of a record, the auto-return adjustment screw is visible. **(See Fig. 12)**

If the stylus does not land in the lead-in groove, adjust as follows.

1. Clamp the tonearm to the arm rest.
2. Take off the rubber cap covering the adjustment screw section.
   Turn the screw with a screwdriver, clockwise or counterclockwise as necessary.
   If the stylus lands too far in,
   –turn counterclockwise.
   If the stylus descends outside the record,
   –turn clockwise.
   Adjust so the stylus tip lands 1 ~ 2mm in from the edge of the record.

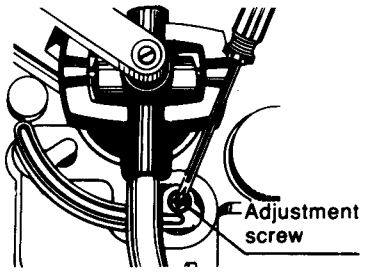


Fig. 10
(Abb. 10)

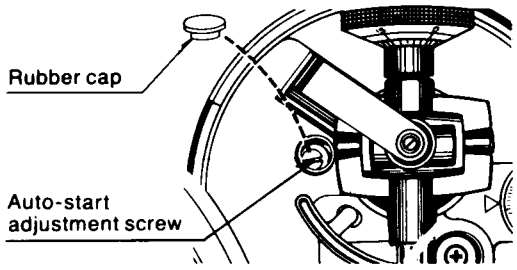


Fig. 11
(Abb. 11)

• Adjustment of automatic return position (Fig. 12)

1. Put the stylus protector on the cartridge.
2. Take off the rubber cap covering the adjustment screw section and move the tonearm toward the center of the record.
   Then, the auto-return position adjustment screw will appear.
   If the tonearm tends to return to the arm rest before the play has finished,
   –turn counterclockwise.
   If the tonearm fails to return after the final groove,
   –turn clockwise.

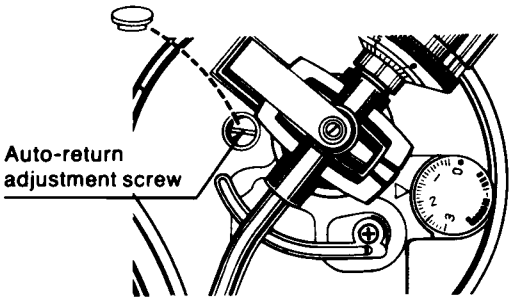


Fig. 12
(Abb. 12)

• Overhang adjustment (Fig. 13)

15 mm is the correct overhang for this tonearm.

Loosen the screws and move the cartridge forward or backward until the distance between the stylus tip and the plug becomes 52 mm (2-3/64").

Tigthen the screws without moving the cartridge.

Adjust the horizontal zero balance, stylus pressure and arm-lift height whenever you change the cartridge.

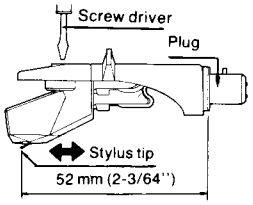


Fig. 13
(Abb. 13)

• Adjustment of rotational speed

After replacement of drive IC (IC101) and variable resistors (VR202, 203) or when the rated speed is not obtained by turning the pitch control knob, perform the adjustment according to the following procedure.

1. Remove the bottom plate. **(Refer to "Disassembly Instructions".)**
2. Place the set on the player repair table.
3. Put on the record and play.
4. Push the speed selector button to "45 r.p.m.".
5. Turn the pitch control knob to central position. **(See Fig. 14)**
6. Adjust VR202 by the screwdriver from under the set until the rated speed (45 r.p.m.) is obtained while checking it through the stroboscope. **(See Fig. 15)**
7. Push the speed selector button to "33 r.p.m.".
8. Adjust VR203 by the screwdriver until the rated speed (33-1/3 r.p.m.) is obtained while checking it through the stroboscope. **(See Fig. 15)**
9. After completing the above-mentioned adjustment, check that the rated speeds can be obtained by pushing the speed selector button.

Note: Be sure to perform the adjustment of 45 r.p.m. first.
As a simple method, it is also possible to adjust VR202 and VR203, removing the turntable. **(See Fig. 16)**

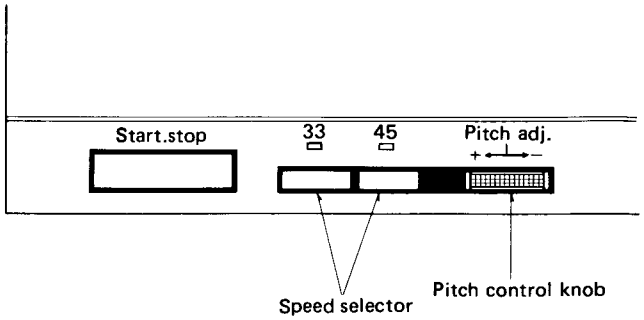


Fig. 14
(Abb. 14)

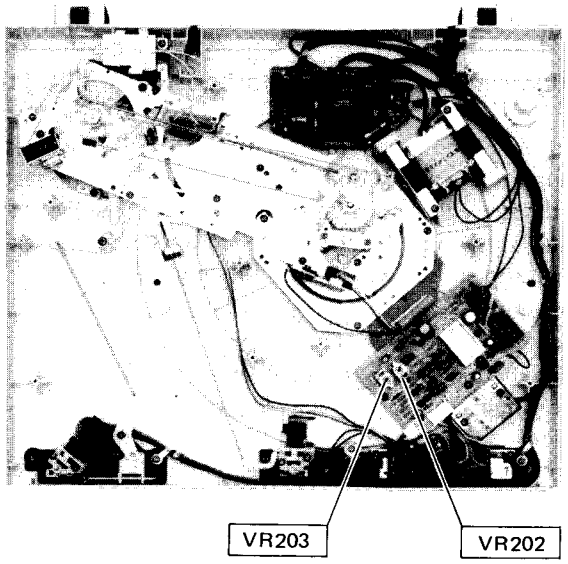


Fig. 15
(Abb. 15)

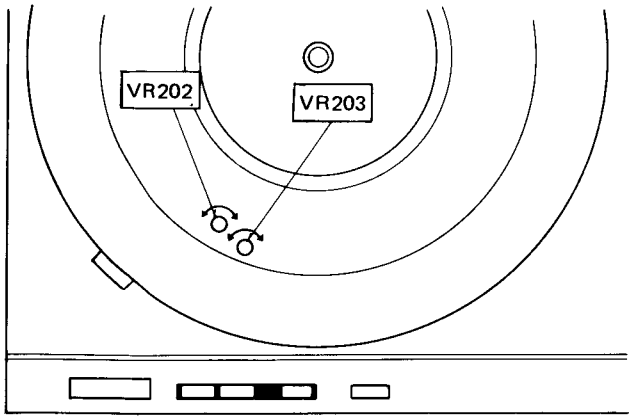


Fig. 16
(Abb. 16)

■ MESSUNGEN UND JUSTIERUNGEN ■ Deutsch ■

• Justierung der Tonarmlifthöhe

Die Tonarmlifthöhe, d.h. der Abstand zwischen Nadelspitze und Schallplattenoberfläche bei Liftsteuerungs-Position " ▼ ", wurde werkseitig auf ca. 5 mm eingestellt. **(Abb. 9)**
Falls der Abstand zu klein oder zu groß ist (z.B. wegen der unterschiedlichen Tonabnehmer-Abmessungen, drehen Sie die Justierschraube im Uhrzeigersinn oder entgegen dem Uhrzeigersinn. **(Abb. 10)**

Drehung im Uhrzeigersinn
–Der Abstand zwischen der Platte und der Nadelspitze wird kleiner.
Drehung entgegen dem Uhrzeigersinn
–Der Abstand zwischen der Platte und der Nadelspitze wird größer.

• Justierung des Aufsetzpunktes der Automatik (Abb. 11)

Anmerkung:
Die Auto-Start- und die Auto-Rückkehr-Positions-Justierschraube sind zusammen angeordnet. **(Abb. 11)**
Wenn der Tonarm in der Nähe oder auf der Tonarmablage ist, so ist die Auto-Start-Positions-Justierschraube sichtbar.
Wenn der Tonarm in der Nähe der Plattenmitte ist, so ist die Auto-Rückkehr-Positions-Justierschraube sichtbar. **(Abb. 12)**
Wenn die Abtastnadel nicht in der Einlaufrille aufsetzt, justieren Sie wie folgt.

1. Befestigen Sie den Tonarm mit der Arretierklammer auf der Tonarmablage.
2. Die Gummikappe abnehmen.
3. Drehen Sie die Justierschraube im Uhrzeigersinn oder entgegen dem Uhrzeigersinn, wie erforderlich.
   Falls der Aufsetzpunkt im Wiedergabeteil der Schallplatte liegt.
   —Entgegen dem Uhrzeigersinn drehen.
   Falls der Aufsetzpunkt außerhalb der Platte liegt.
   —Im Uhrzeigersinn drehen.
   Justieren Sie so, daß die Nadelspitze 1 – 2 mm vom Rand entfernt auf der Platte aufsetzt.

• Justierung des Abschaltpunktes der Automatik (Abb. 12)

(Die Gummikappe abnehmen)

1. Setzen Sie den Nadelschutz auf den Tonabnehmer auf.
2. Führen Sie den Tonarm gegen die Plattenmitte.
   Die Justierschraube für den Abschaltpunkt der Automatik wird dann sichtbar.
   Falls der Tonarm zu früh zurückkehrt.
   —Entgegen dem Uhrzeigersinn drehen.
   Falls der Tonarm nach Erreichen der Auslaufrille nicht zurückkehrt.
   —Im Uhrzeigersinn drehen.

• Justierung dus Überhangs (Abb. 13)

Der korrekte Überhang für dieses Gerät beträgt 15 mm.
Lösen Sie die Befestigungsschrauben und versetzen Sie den Tonabnehmer vorwärts oder rückwärts, bis der Abstand zwischen dem Stecker und der Nadelspitze 52 mm beträgt.
Ziehen Sie die Befestigungsschrauben an, ohne dabei den Tonabnehmer zu verschieben.
Justieren Sie die horizontale "**0**"-Balance, die Auflagekraft und die Tonarmlifthöhe nach jedem Auswechseln des Tonabnehmers.

• Justierung der Drehzahl

Nach dem Ersetzen des Antriebs-IC (IC101) und der Drehwiderstände (VR202, VR203), oder wenn die Einstellung der Nenndrehzahl durch Drehen des Drehzahl-Feineinstellers nicht möglich ist, muß die Justierung auf folgende Weise vorgenommen werden.

1. Die Bodenplatte abnehmen. **(Siehe "Anleitung für die Zerlegung".)**
2. Das Gerät auf den Plattenspieler-Reparaturtisch stellen.
3. Eine Platte auflegen und abspielen.
4. Die Drehzahl-Wahlschaltertaste in die "45 U/min"-Position drücken.
5. Den Drehzahl-Feineinsteller in die Mittelstellung stellen. **(Siehe Abb. 14)**
6. VR202 mit einem Schraubenzieher von der Unterseite des Gerätes her drehen, bis die Nenndrehzahl (45 U/min) erreicht ist, und gleichzeitig auf dem Stroboskop überprüfen. **(Siehe Abb. 15)**
7. Die Drehzahl-Wahlschaltertaste in die "33 U/min"-Position drücken.
8. VR203 mit einem Schraubenzieher drehen, bis die Nenndrehzahl (33-1/3 U/min) erreicht ist, und gleichzeitig auf dem Stroboskop überprüfen. **(Siehe Abb. 15)**
9. Nach Beenden der obigen Justierung überprüfen, daß die beiden Nenndrehzahlen durch Drücken der Drehzahl-Wahlschaltertaste erreicht werden können.
   Anmerkung: Die Justierung für 45 U/min muß unbedingt zuerst durchgeführt werden.
10. Eine einfache mögliche Methode besteht darin, VR202 und VR203 nach Entfernen des Plattentellers zu justieren. **(Siehe Abb. 16)**

■ MESURAGES ET RÉGLAGES ——— Français ———

• Mise au point de la hauteur de l'élévateur du bras

La hauteur de l'élévateur du bras (distance entre l'extrémité de la pointe de lecture et la surface du disque, lorsque la commande de pose et de relevage est à la position " ▼ ") a été réglée en usine sur approximativement 5 mm. **(Fig. 9)**
Si l'intervalle est trop étroit ou trop large, (à cause, par exemple, des différentes dimensions de cellules pick-up), tourner la vis de réglage dans le sens des aiguilles d'une montre ou dans le sens inverse. **(Fig. 10)**
Rotation dans le sens des aiguilled d'une montre.
—La distance entre la surface du disque et l'extrémité de la pointe de lecture diminue.
Rotation dans le sens contraire des aiguilles d'une montre.
—La distance entre la surface du disque et l'extrémité de la pointe de lecture augmente.

• Mise au point de la position de démarrage automatique (Fig. 11)

Attention:

Les vis de réglage du démarrage automatique et du retour automatique sont disposées ensemble. **(Fig. 11)**

Lorsque le bras de lecture est sur ou près de l'accoudoir du bras, la vis de réglage de démarrage automatique est visible; lorsque le bras de lecture est près du centre d'un disque, la vis de réglage du retour automatique est visible. **(Fig. 12)**

Si la pointe de lecture ne repose pas dans le sillon d'entrée, ajuster de la manière suivante.

1. Bloquer le bras de lecture sur le support du bras.
2. Retirer le capuchon en caoutchouc.
3. Avec un tournevis, tourner la vis de réglage dans le sens des aiguilles d'un montre ou dans le sens inverse selon la nécessité.
   Si la tête de la pointe de lecture se dépose trop loin du sillon enregistré.
   —Tourner dans le sens contraire des aiguilles d'une montre.
   Si la tête de la pointe de lecture se dépose en dehors du disque.
   —Tourner dans le sens des aiguilles d'une montre.
   Ajuster de façon à ce que l'extrémité de la pointe de lecture atterrisse à 1 — 2 mm à partir du bord du disque.

• Mise au point de la position de retour automatique (Fig. 12)

(Retirer le capuchon en caoutchouc.)

1. Placer le capot protecteur de la pointe de lecture sur la cellule pick-up.
2. Déplacer le bras de lecture vers le centre de disque.
   Alors, la vis de réglage du retour automatique apparaîtra.
   Si le bras de lecture tend à revenir vers le support du bras avant que l'audition ne soit terminée.
   —Tourner dans le sens contraire des aiguilles d'une montre.
   Si le bras de lecture ne peut revenir en arrière après le dernier sillon.
   —Tourner dans le sens des aiguilles d'une montre.

• Réglage du surplomb (Fig. 13)

Le surplomb approprié pour ce bras de lecture est de 15 mm.

Desserrer les vis et déplacer la cellule vers l'avant ou vers l'arrière jusqu'à ce que la distance entre l'extrémité de la pointe de lecture et la fiche soit de 52 mm.

Serrer les vis sans faire bouger la cellule.

Mettre au point l'équilibrage zéro horizontal, la force verticale d'appui de la pointe de lecture et la hauteur du bras élévateur chaque fois que vous changez de cellule.

• Réglage de la vitesse rotationnelle

Après le remplacement du circuit intégré excitateur (IC101) et des résistances variables (VR202, VR203) ou lorsque la vitesse nominale de rotation n'est pas obtenue en tournant la manette de réglage d'écart, effectuer la mise au point selon le mode opératoire suivant.

1. Retirer le panneau de la face inférieure. **(Se référer aux "Instructions de Démontage".)**
2. Placer l'appareil sur la table de dépannage pour électrophones.
3. Placer un disque et faire jouer.
4. Pousser la manette sélectrice de vitesse sur "45 r.p.m." (45 t/p.m.).
5. Tourner la manette de réglage d'écart sur la position centrale. **(Voir Fig. 14)**
6. Ajuster VR202 avec un tournevis à partir du dessous de l'appareil jusqu'à ce que la vitesse nominale de rotation (45 t/p.m.) soit obtenue tout en la vérifiant par l'intermédiaire du stroboscope. **(Voir Fig. 15)**
7. Pousser la manette sélectrice de vitesse sur "33 r.p.m." (33 t/p.m.).
8. Ajuster VR203 avec un tournevis jusqu'à ce que la vitesse nominale de rotation (33-1/3 t/p.m.) soit obtenue tout en la vérifiant par l'intermédiaire du stroboscope. **(Voir Fig. 15)**
9. Après avoir achevé la mise au point mentionnée cidessus, vérifier si les vitesses nominales de rotation peuvent être obtenues en poussant la manette sélectrice de vitesse.
   Nota: S'assurer d'effectuer tout d'abord la mise au point de 45 t/p.m.
10. Comme méthode plus simplifiée, il est possible aussi d'ajuster VR202 et VR203 en retirant la platine. **(Voir Fig. 16)**

■ MEDICIONES Y AJUSTES Español

• Ajuste de la altura de elevación del brazo

La altura de elevación del brazo (o sea, la distancia entre la punta de la aguja y la superficie del disco cuando el control de colocación está en la posición "▼") ha sido regulada en la fábrica aproximadamente a 5 mm. **(Fig. 9)**

En caso que el espacio libre fuese demasiado estrecho o demasiado abundante (debido, por ejemplo, a la diferencia en dimensiones de los cartuchos), girar el tornillo de ajuste hacia la derecha o hacia la izquierda. **(Fig. 10)**

Rotación hacia la derecha
—reduce la distancia entre el disco y la punta de la aguja.
Rotación hacia la izquierda
—aumenta la distancia entre el disco y la punta de la aguja.

• Ajuste de la posición para el arranque automático (Fig. 11)

Nota:
Los respectivos tornillos de ajuste para arranque y retorno automáticos se encuentran juntos. **(Fig. 11)**
Cuando el brazo sonoro está puesto sobre el apoyo o cerca de éste, se dejará ver el tornillo de ajuste del arranque automático; estando cerca del centro del disco, se dejará ver el de ajuste del retorno automático. **(Fig. 12)**
En caso que la aguja no se depositara en el surco de comienzo, regular de la manera que sigue.

1. Sujetar el brazo sonoro al apoyo del mismo con la grapa.
2. Quitar la tapita de goma.
3. Girar el tornillito de ajuste hacia la derecha o hacia la izquierda usando un destornillador, según sea necesario.
   En caso que la punta de la aguja se deposita muy dentro del surco grabado:
   —Girar hacia la izquierda.
   En caso que la punta de la aguja se deposita fuera del disco:
   —Girar hacia la derecha.
   Regular de manera tal que la punta de la aguja se deposite a uno o dos milímetros del borde del disco.

• Ajuste de la posición para retorno automático (Fig. 12)

(Quitar la tapita de goma.)

1. Colocar la protección de la aguja en el cartucho.
2. Mover el brazo sonoro hacia el centro del disco.
   Con ello, aparecerá el tornillo de ajuste del retorno automático.
   Cuando el brazo sonoro tienda a volver a su apoyo antes de terminar la ejecución:
   —Girar hacia la izquierda.
   En caso que el brazo sonoro no vuelva después de haber tocado el último surco del disco:
   —Girar hacia la derecha.

• Ajuste de la proyección (Fig. 13)

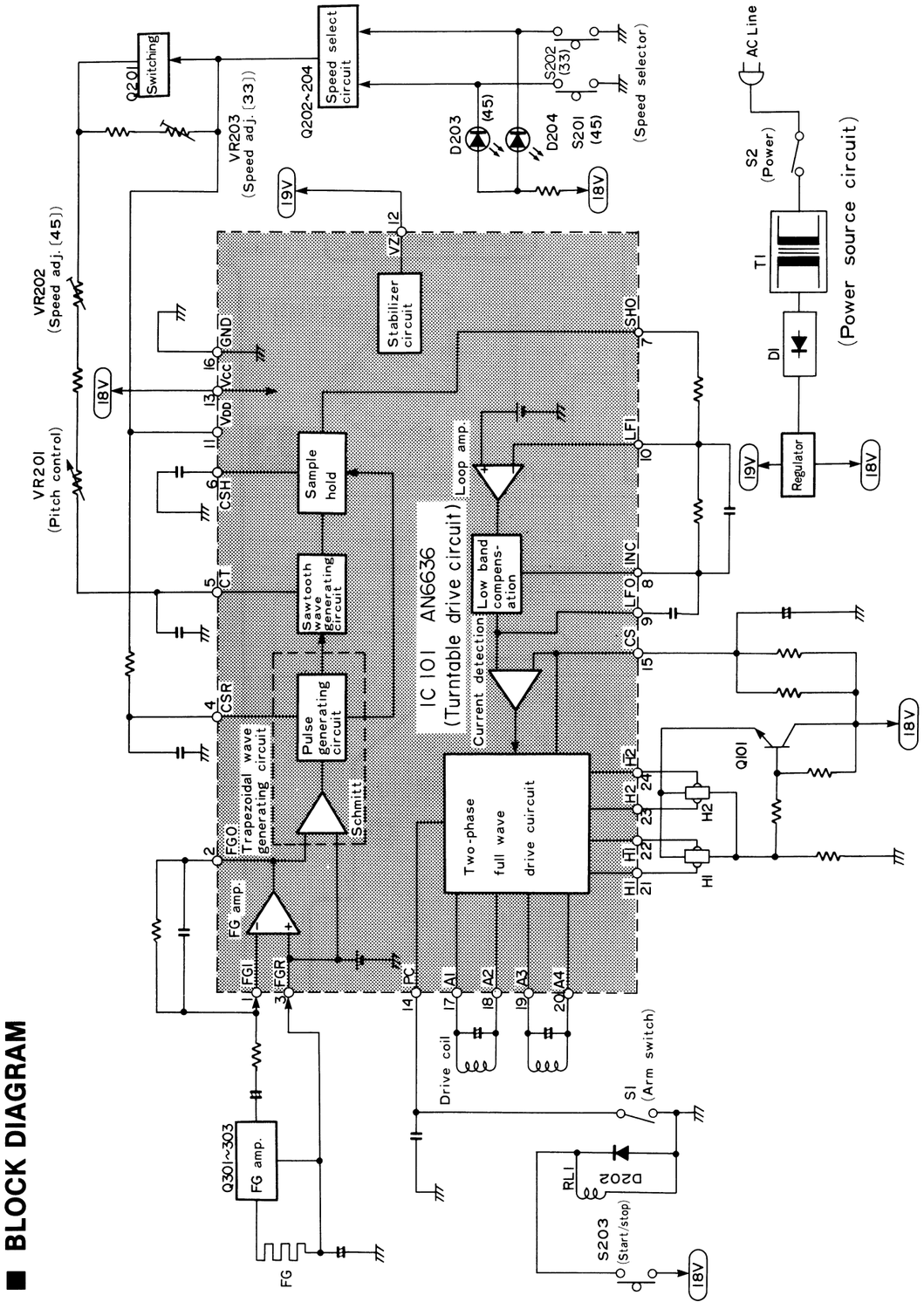
La proyección correcta para este cartucho es de 15 mm.
Aflojar los tornillos y mover el cartucho para adelante y para atrás hasta que la distancia entre la punta de la aguja y la clavija sea de 52 mm.
Apretar los tornillos sin mover el cartucho.
Regular el equilibrio horizontal a cero, la presión de la aguja y la altura de elevación del brazo toda vez que se cambia el cartucho.

• Ajuste de velocidad rotacional

Después del reemplazo de IC de impulsión (IC101) y resistores variables (VR202, VR203) o cuando no se obtenga la velocidad nominal girando la perilla de control de altura, efectúe el ajuste según el siguiente procedimiento:

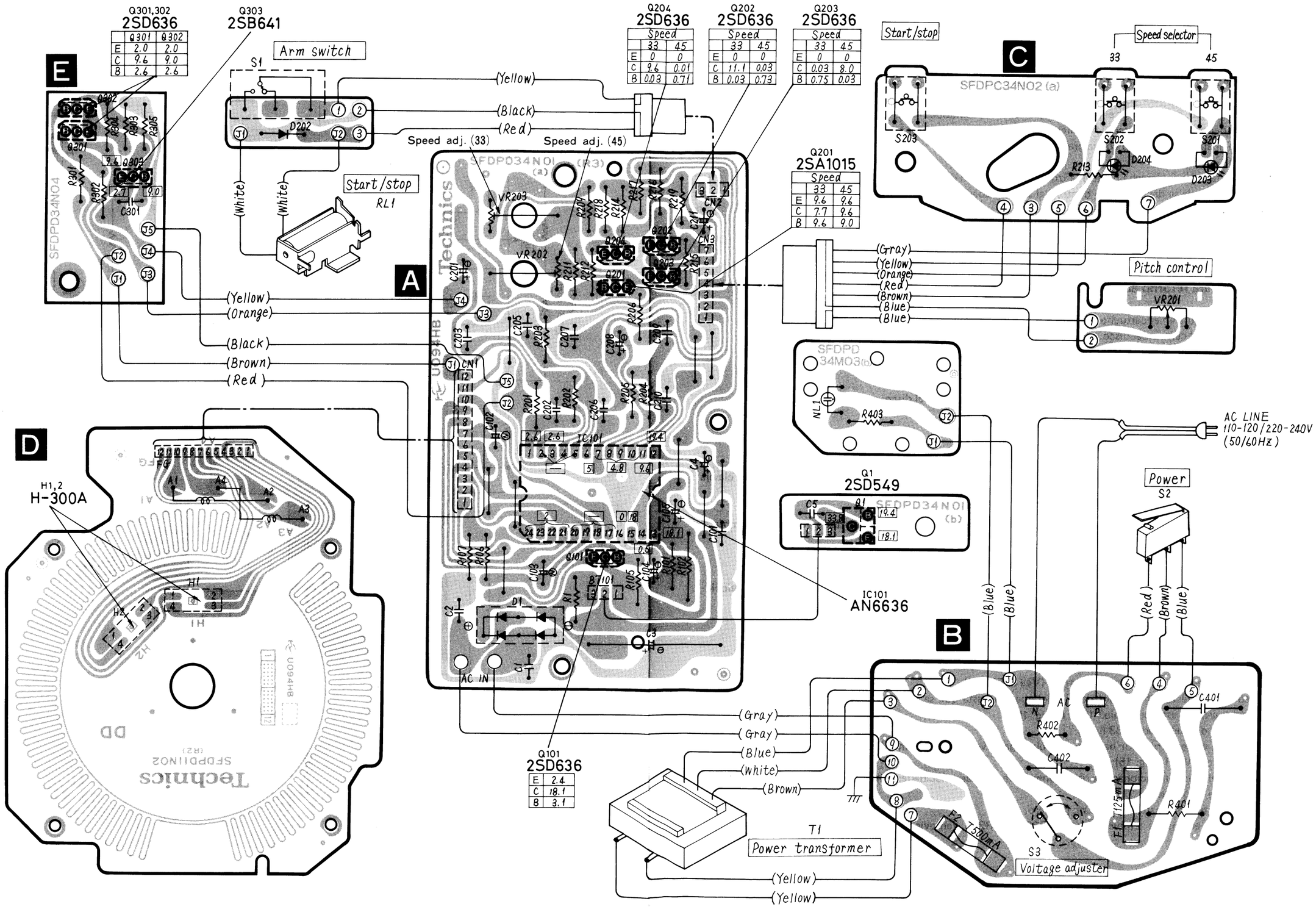
1. Remueva el tablero inferior. **(Refiera a "Instrucciones de Desmontaje".)**
2. Coloque el aparato sobre el banco de reparaciones para tocadiscos.
3. Ponga el disco y toque.
4. Apriete el botón selector de velocidad a "45 r.p.m.".
5. Gire la perilla de control de altura a la posición central. **(Vea la Fig. 14)**
6. Ajuste VR202 mediante el destornillador por debajo del aparato hasta que se obtenga la velocidad nominal (45 r.p.m.) mientras la verifica a través del estroboscopio. **(Vea la Fig. 15)**
7. Apriete el botón selector de velocidad a "33 r.p.m.".
8. Ajuste VR203 mediante el destornillador hasta que se obtenga la velocidad nominal (33-1/3 r.p.m.) mientras la verifica a través del estroboscopio. **(Vea la Fig. 15)**
9. Después de completar el ajuste mencionado arriba, compruebe que las velocidades nominales se puedan obtener apretando el botón selector de velocidad.
   Nota: Asegúrese de efectuar el ajuste de 45 r.p.m. primero.
10. Como un método simple, es posible también ajustar VR202 y VR203, removiendo el plato giradiscos. **(Vea la Fig. 16)**

■ BLOCK DIAGRAM



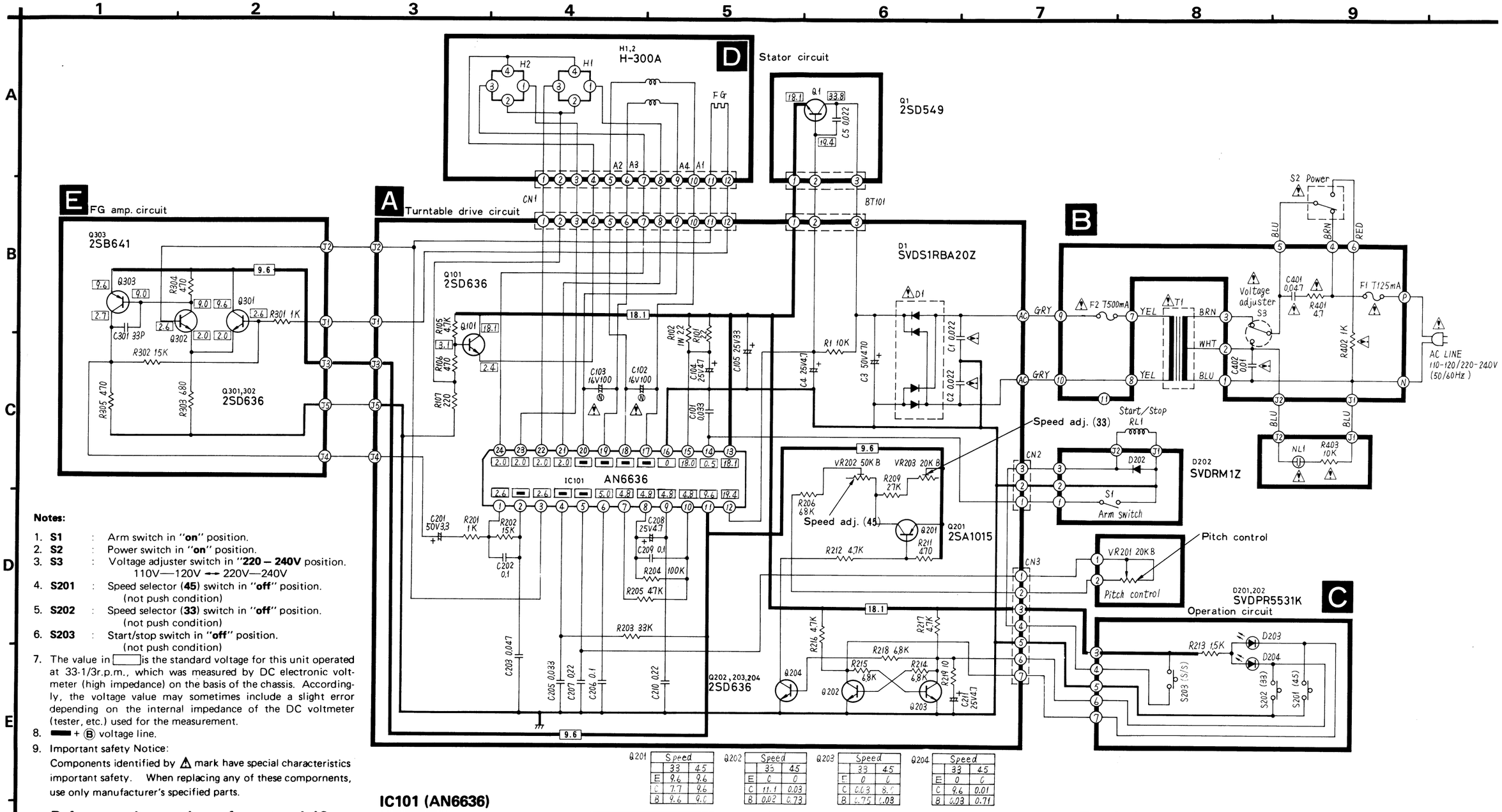
■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

Ground (Earth) lines



■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)



Notes:

1. **S1** : Arm switch in "**on**" position.
2. **S2** : Power switch in "**on**" position.
3. **S3** : Voltage adjuster switch in "**220 – 240V** position.
   110V—120V ⇌ 220V—240V
4. **S201** : Speed selector (**45**) switch in "**off**" position. (not push condition)
5. **S202** : Speed selector (**33**) switch in "**off**" position. (not push condition)
6. **S203** : Start/stop switch in "**off**" position. (not push condition)
7. The value in ☐ is the standard voltage for this unit operated at 33-1/3r.p.m., which was measured by DC electronic voltmeter (high impedance) on the basis of the chassis. Accordingly, the voltage value may sometimes include a slight error depending on the internal impedance of the DC voltmeter (tester, etc.) used for the measurement.
8. ▬ + Ⓑ voltage line.
9. Important safety Notice:
   Components identified by ⚠ mark have special characteristics important safety. When replacing any of these compornents, use only manufacturer's specified parts.

- **Reference voltage and waveform at each IC terminal (Pin)**

  This indicated voltage values and waveform are measured by oscilloscope at 33r.p.m. rotation.

Q201	Speed	
	33	45
E	9.6	9.6
C	7.7	9.6
B	9.6	9.6

Q202	Speed	
	33	45
E	0	0
C	11.1	0.03
B	0.02	0.73

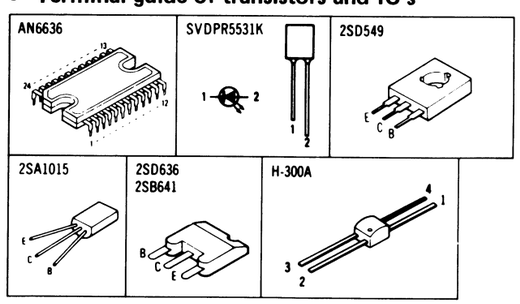
Q203	Speed	
	33	45
E	0	6
C	0.03	8.7
B	0.75	0.03

Q204	Speed	
	33	45
E	0	0
C	9.6	0.01
B	0.03	0.71

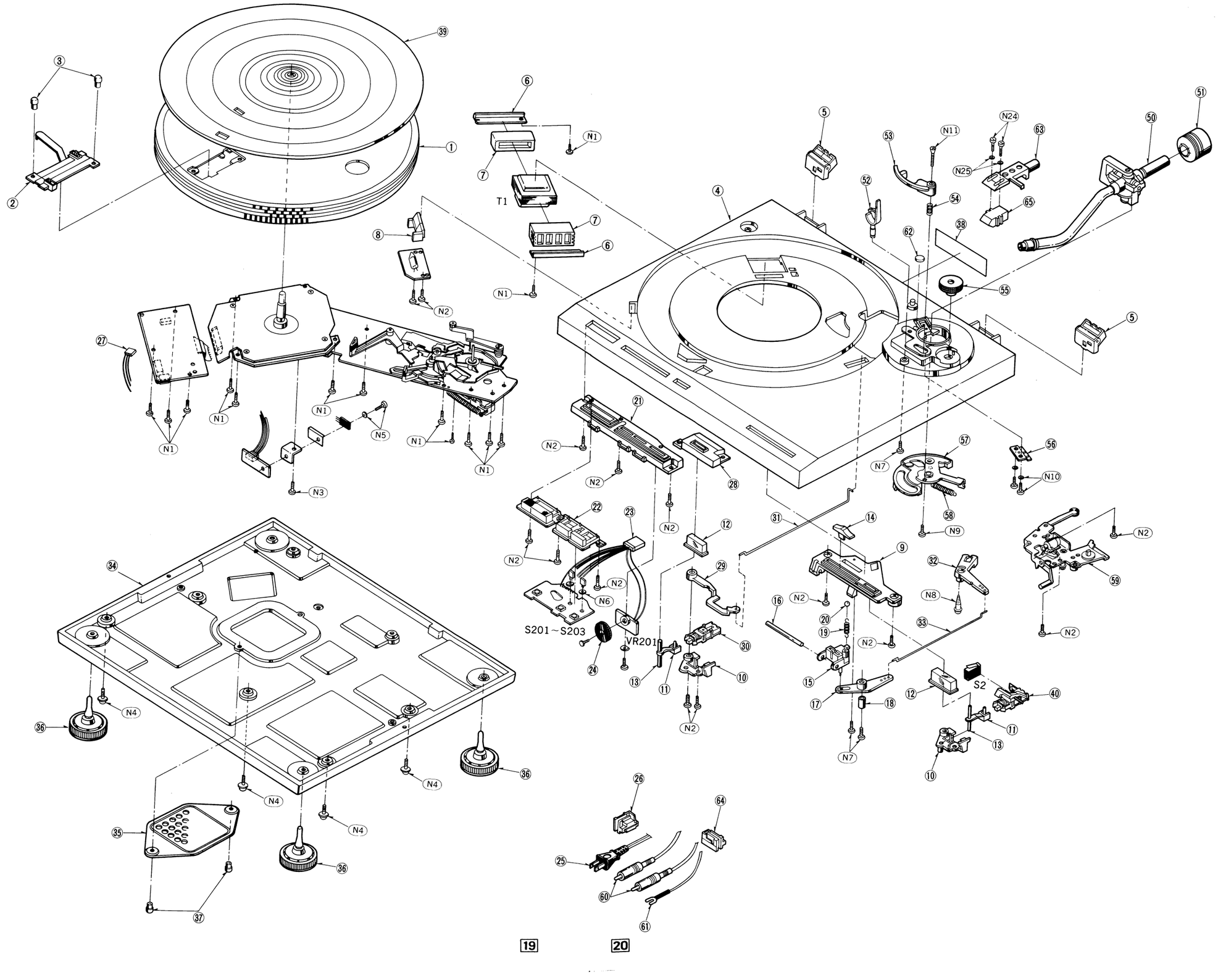
IC101 (AN6636)

Pin No.	Stop	Start	Pin No.	Stop	Start	Pin No.	Stop	Start
①	2.6V	2.6V	⑦	8.0V	20ms 5.0V 0	⑰ ⑱	0V	3.0V 0
②	2.6V	20ms 2.4V 3.0V 0	⑧	0.2V	4.8V	⑲ ⑳		
③	2.6V	2.6V	⑨	0.2V	4.8V			
④	9.4V	20ms 9.5V 0	⑩	4.8V	4.8V	㉑ ㉔	2.1V	2.0V 0
			⑪	9.6V	9.6V			
⑤	8.8V	20ms 5.0V 0	⑫	19.4V	19.4V			
			⑬	18.1V	18.1V	㉒ ㉓	2.0V	2.0V 0
⑥	8.2V	20ms 5.2V 0	⑭	0V	0.5V			
			⑮	18.1V	18.0V			

- **Terminal guide of transistors and IC's**



■ EXPLODED VIEWS...Cabinet & Chassis Parts



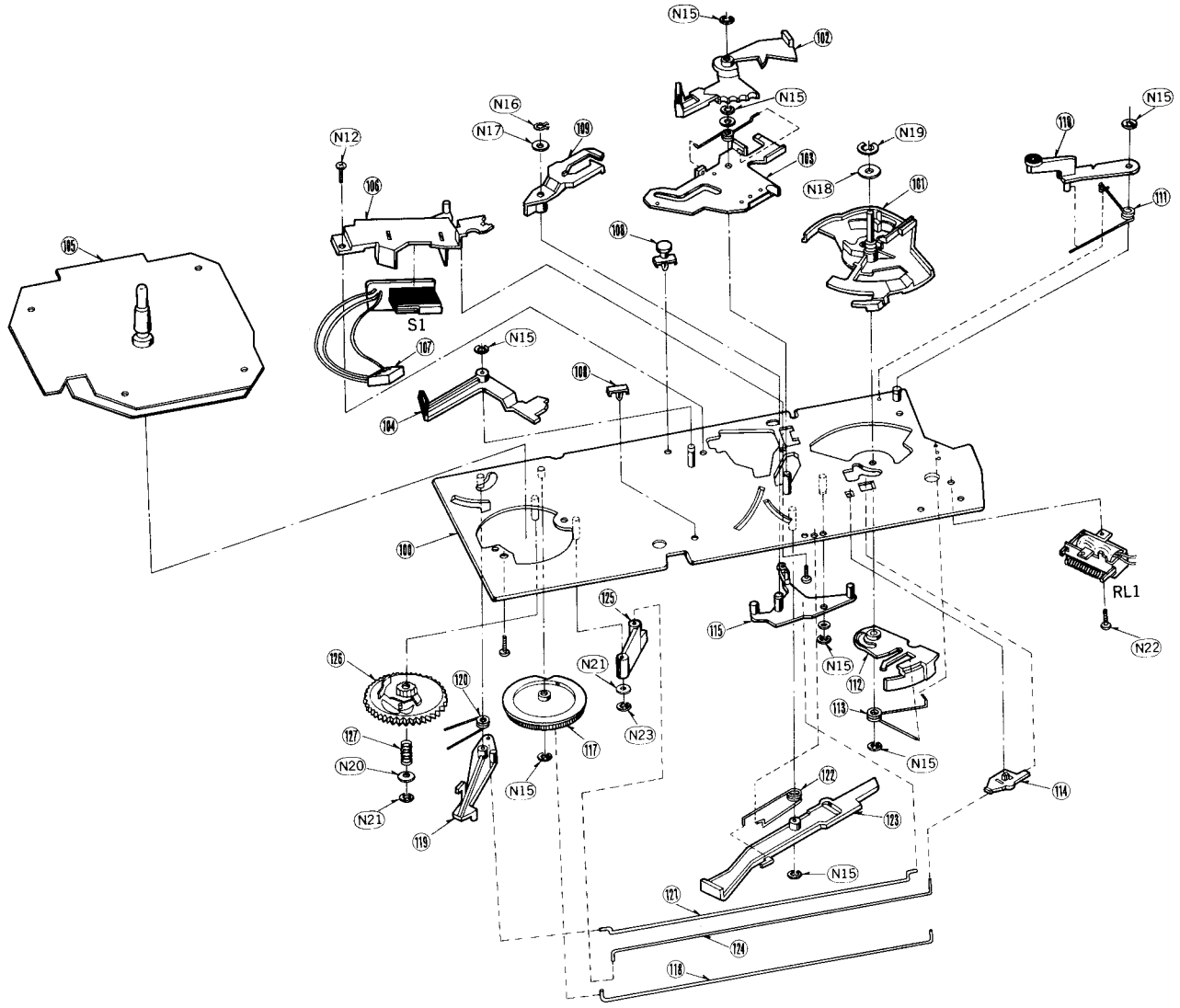
■ REPLACEMENT PARTS LIST...Cabinet, Chassis and Packing Parts

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
Components indentified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ-marked parts are used for black type only, while ○-marked parts are for silver type only.
4. Parts other than Ⓚ and ○-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No. : SL-D303 (K)

Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1		SFTED34N01E	Turntable
2		SFUMQ34N01E	Base, Disc Size Sensor
3		SFUZD33–01E	Latch, Disc Size Sensor Base
4	○	SFACD34N01	Cabinet (Silver)
4	Ⓚ	SFACD34N21	Cabinet (Black)
5		SFATB33N01A	Hinge
6		SFUPD34N01	Plate, Transfomer
7		SFGCD34N01	Rubber Cushion, Transfomer
8		SFUMQ11N09	Cover, Neon Lamp Strove
9		SFUMQ34N02	Guide, Power Switch
10		SFUMQ34N12	Plate, Power/Repeat Switch
11		SFUMQ34N13	Plate, Power/Repeat Knob
12		SFKTQ34N02	Knob, Power/Repeat
13		SFXJQ34N02	Shaft, Power/Repeat
14		SFKTQ34N01	Knob, Cueing
15		SFUMQ34N23	Slider, Cueing
16		SFXJQ34N01	Shaft, Cueing
17		SFUMQ34N04	Rink, Cueing (A)
18		SFXOQ34N01	Pipe, Cueing
19		SFQA130–11	Spring, Cueing
20		SFYB–5–32	Ball, Cueing
21		SFUMD34N01	Guide, Start/Stop
22		SFKTQ34N03	Knob, Start/Stop
23		SFDJD34N03E	Connector Ass'y 7P
24		SFKTD11N01	Knob, Speed Adjustment
25 [XL]	⚠	SJA141	AC Cord
25 [EK]	⚠	SJA139	AC Cord
25 [Other Areas]	⚠	SJA137	AC Cord
26 [Other Areas]		SFUM190–11	Bushing, AC Cord
26 [XL] only		SFUM190–12	Bushing, AC Cord
27		SFDJD34N01E	Connector Ass'y 3P
28		SFUMB33N04	Guide, Repeat Knob
29		SFUMQ34N05	Rink, Repeat
30		SFDSQ34N03	Switch, Repeat
31		SFUZD34N01	Rod, Repeat
32		SFUMB33N11	Rink, Cueing (B)
33		SFUZQ34N02	Rod, Cueing
34		SFAUD34N01	Bottom Board
35		SFUPQ34N01	Gear, Cover
36		SFGAD34N01	Audio Insulator
37		SFUZQ34N06E	Latch, Gear Cover
38 [E]		SFNND34S01	Name Plate
38 [EK, XL]		SFNND34G02	Name Plate
38 [XA, XM]		SFNND34X01	Name Plate
38 [Other Areas]		SFNND34R01	Name Plate
39		SFTGQ34N01	Turntable Mat
40		SFDSTWM9901A	Power Switch
		SFADB33N01E	Dust Cover
TONEARM PARTS			
50	○	SFPAM30301A	Tone Arm (Silver)
50	Ⓚ	SFPAM30302A	Tone Arm (Black)
51		SFPWG30301A	Counter weight
52		SFPRT30301E	Arm Rest
53		SFPRT30302E	Lift Arm
54		SFPSP30304	Spring, Lift Arm
55		SFPJK30301	Knob, Anti-Skate Force Control
56		SFUPD34N02	Sub Plate Tone Arm
57		SFPAB30301A	Plate, Tone Arm
58		SFPSP30302	Spring, Anti-Skate Force Control
59		SFPAB30305A	Plate, Lift Ass'y
60		SFDH212–01	Phono Cord
61		SFEL028–01E	Ground Wire
62	○	SFGK170–01	Rubber, Cap (Silver)
62	Ⓚ	SFGK171F01	Rubber, Cap (Black)
63		SFPCC31002K	Head Shell
64		SFUM212–08	Bushing, Phono Cord
65		EPC–U25S	Cartridge **Not available as Parts, Please
		EPS–25CS	Stylus Order to Sales Department
SCREWS, WASHERS and CIRCLIPS			
N1		**XTV3+10BFN**	Screw, Tapping, ⊕ 3 x 10
N2		**XTV3+8BFN**	Screw, Tapping, ⊕ 3 x 8
N3		**XTV3+6BFN**	Screw, Tapping, ⊕ 3 x 6
N4		XTWS3+20QFYR	Screw, Tapping, ⊕ 3 x 20
N5		XYN3+C8S	Screw, Tapping, ⊕ 3 x 8
N6		SFXWQ11N03	Washer
N7		XTW3+10Q	Screw, Tapping, ⊕ 3 x 10
N8		SFXGQ20–01	Screw
N9		SFXGQ34N02	Screw,
N10		XYN3+C12S	Screw, Tapping, ⊕ 3 x 12
N11		XTS3+16BFZ	Screw, Tapping, ⊕ 3 x 16
N12		XTW3+8E	Screw, Tapping, ⊕ 3 x 8
N15		**XUC3FT**	Circlip, ϕ3
N16		**XUB4FT**	Circlip, ϕ2
N17		SFXWQ34N26	Washer
N18		SFXWQ30–11	Washer
N19		**XUC5FT**	Circlip, ϕ5
N20		**XWE4BW**	Washer
N21		SFXWQ34N21	Washer
N22		XTV3+6BFN	Screw, Tapping, ⊕ 3 x 6
N23		**XUC2FT**	Circlip, ϕ2
N24		SFCZV8800	Screw, Cartridge
N25		SFPEW9601	Washer, Cartridge
ACCESSORIES			
A1 [E]		SFNUD34S01	Instructions Book, Printed Matter
A1 [EK]		SFNUD34G01	Instructions Book, Printed Matter
A1 [Other Areas]		SFNUD34X01	Instructions Book, Printed Matter
A2		SFWE212–01	Adaptor, 45r.p.m.
A3		SFCZB30505	Shell Weight
A4 [XA, XM]		SFDKI19118	2 Pin Plug, Power Source
PACKING PARTS			
P1	○	SFHPD34M01	Carton Box (Silver)
P1 [EF]	○	SFHPD34C01	Carton Box (Silver)
P1	Ⓚ	SFHPD34M21	Carton Box (Black)
P1 [EF]	Ⓚ	SFHPD34C21	Carton Box (Black)
P2		SFHHQ34N01	Pad, Front
P3		SFHHQ34N02	Pad, Rear
P4		SFHDQ34N01	Pad, Turntable
P5		SFHZ144X02	Sheet
P6		SFYH60X60	Polyethylene Bag, Unit/Dust Cover
P7		SFYH40X45	Polyethylene Bag, Turntable
P8		SPB1083	Polyethylene Bag, Accessories
P9		SPJ15	Polyethylene Bag, 45 Adaptor
P10 [XA, XM]		SFHDQ34X01	Front, Pad
P11 [XA, XM]		SFHDQ34X02	Rear, Rad

■ EXPLODED VIEWS.....Automatic Mechanism Plate



Ref. No.		Part No.	Part Name & Description
AUTOMATIC MECHANISM ASS'Y			
100		SFUKQ34N21E	Plate, Automatic Mechanism
101		SFUMQ34N39E	Cam, Drive
102		SFUMQ34N34E	Index Plate Ass'y
103		SFUPQ34N23E	Index Sub Plate Ass'y
104		SFUMQ34N33E	Plate, Disc Size Sensor
105		SFMZD34N01Z	Stater Frame Ass'y
106		SFUMQ34N36	Case, Switch
107		SFDJD34N02E	Connector Ass'y 3P
108		SFEZQ34N01	Clamper
109		SFUMQ34N38	Lever, Stop
110		SFUMQ34N43	Plate, Brake
111		SFQSQ34N28	Spring, Brake
112		SFUMQ34N35	Cam, Start
113		SFQSQ34N24	Spring, Start
114		SFUMQ34N32	Support, Actuating Rod
115		SFUMQ34N44	Lever, Switch
117		SFUGQ34N22	Gear, Drive
118		SFQSQ34N22	Rod, Drive
119		SFUMQ34N31	Plate, Stop Gear
120		SFQSQ34N21	Spring, Stop Gear
121		SFQSQ34N26	Rod, Switch
122		SFQSQ34N25	Spring, Repeat
123		SFUMQ34N41	Lever, Repeat
124		SFQSQ34N23	Rod, Actuating
125		SFUMQ34N42	Connector, Actuating
126		SFUGQ34N21E	Main Gear Ass'y
127		SFQAQ34N21	Spring, Main Gear

Areas

* [E] is available in Switzerland and Scandinavia.
* [EK] is available in United Kingdom.
* [XL] is available in Australia.
* [EG] is available in F.R. Germany.
* [EB] is available in Belgium.
* [EF] is available in France.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XM] is available in Central South America.
* [EH] is available in Holland.
* [Ei] is available in Italy.
* [EC] is available in Czechoslovakia.

■ REPLACEMENT PARTS LIST...Electrical Parts

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components indentified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area.
   Parts without these indications can be used for all areas.

Areas

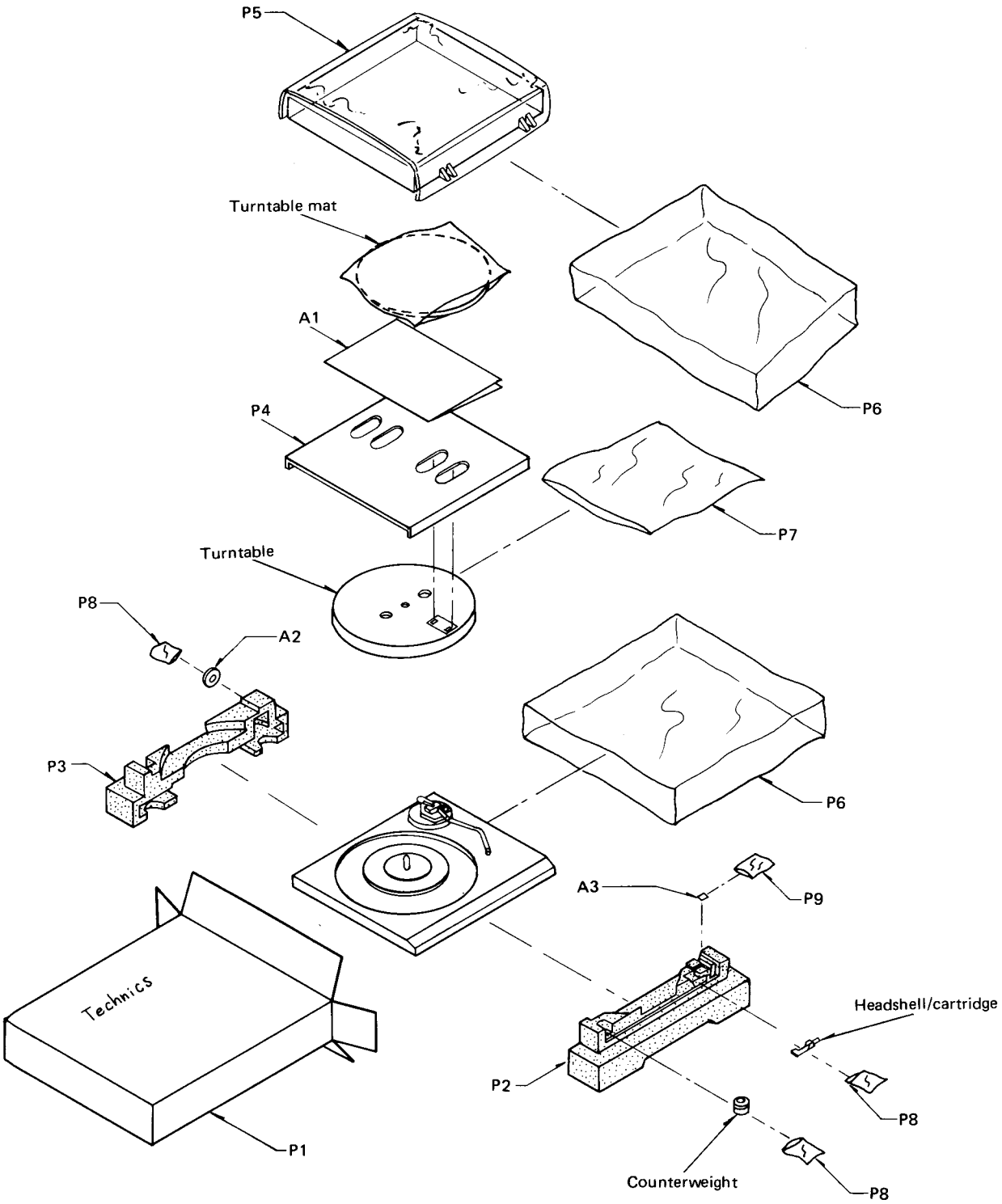
* [E] is available in Switzerland and Scandinavia.
* [EK] is available in United Kingdom.
* [XL] is available in Australia.
* [EG] is available in F.R. Germany.
* [EB] is available in Belgium.
* [EF] is available in France.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XM] is available in Central South America.
* [EH] is available in Holland.
* [Ei] is available in Italy.
* [EC] is available in Czechoslovakia.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUIT			
IC101		AN6636	IC, Drive
TRANSISTORS			
Q1		2SD549	Transistor, Reguletor
Q101, 301, 302		2SD636	Transistor, Regulator & FG Amplifier
Q201		2SA1015–Y	Transistor, Switching
Q202, 203, 204		2SD636	Transistor, Speed Selector & Switching
Q303		2SB641	Transistor, FG Amplifier
DIODES			
D1	⚠	SVDS1RBA20Z	Diode, Rectifier
D202		SVDRM1Z	Diode
D203, 204		SVDPR5531K	Light Emitting, Speed Indicator
HALL ELEMENT			
H1, 2		H–300A	Hall Element, Turntable Position Detector
LAMP			
NL1	⚠	SFDNE2HU	Neon Lamp, Strobe
SOLENOID			
RL1		SFDZQ34N01Z	Solenoid Ass'y, Start/Stop
VARIABLE RESISTORS			
VR201		EVLEAAT12B24	Pitch Control 20kΩ (B)
VR202		**EVTS3MA00B54**	Speed Adjustment 45 r.p.m. 50kΩ (B)
VR203		**EVTS3MA00B24**	Speed Adjustment 33 r.p.m. 20kΩ (B)
SWITCHES			
S1		SFDSAH2985	Switch, Arm (Rest) Switch
S2	⚠	SFDSSS5GLP	Switch, Power Source
S3	⚠	SFDSHXW01335	Switch, Voltage Adjuster
S201, 202, 203		EVQQJR02K	Switch, Stop & Speed Selector
POWER TRANSFORMER			
T1	⚠	SLT57P25E	Transformer, Power Source
FUSES			
F1	⚠	XBA2C012T1A	Fuse, T 0.12A 250V
F2	⚠	XBA2C05TR0	Fuse, T 0.5A 250V

Ref. No.		Part No.	Part Name & Description
RESISTORS			
R1		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R101		**ERD25FJ220**	Carbon, 1/4W, 22Ω, ± 5%
R102		**ERX1ANJ2R2**	Metal Oxide, 1W, 2.2Ω, ± 5%
R105		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R106		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R107		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R201		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R202		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R203		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R204		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R205		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R206		**ERO25CKF6802**	Metal Film, 1/4W, 68kΩ, ± 1%
R209		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ± 5%
R211		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R212		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R213		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R214, 215		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ± 5%
R216, 217		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R218		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ± 5%
R219		**ERD25FJ100**	Carbon, 1/4W, 10Ω, ± 5%
R301		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R302		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R303		**ERD25FJ681**	Carbon, 1/4W, 680Ω, ± 5%
R304, 305		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R401	⚠	**ERD50FJ4R7**	Carbon, 1/2W, 4.7Ω, ± 5%
R402	⚠	**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R403	⚠	**ERG1ANJ103**	Metal Oxide, 1W, 10kΩ, ± 5%
CAPACITORS			
C1, 2	⚠	**ECKD1H223PF**	Ceramic, 50V, 0.022μF, $^{+100}_{0}$%
C3		**ECEB1HS471**	Electrolytic, 50V, 470μF
C4		**ECEA25Z4R7**	Electrolytic, 25V, 4.7μF
C5		**ECKD1H223PF**	Ceramic, 50V, 0.022μF, $^{+100}_{0}$%
C101		**ECQM1H333JZ**	Polyester, 50V, 0.033μF, ± 5%
C102, 103	⚠	ECEA1CN101S	Non-Polar Electrolytic, 16V, 100μF
C104		**ECEA1ES470**	Electrolytic, 25V, 47μF
C105		**ECEA1VS330**	Electrolytic, 35V, 33μF
C201		**ECEA50Z3R3**	Electrolytic, 50V, 3.3μF
C202		**ECQM1H104JZ**	Polyester, 50V, 0.1μF, ± 5%
C203		**ECQM1H473JZ**	Polyester, 50V, 0.047μF, ± 5%
C205		**ECQM1H333JZ**	Polyester, 50V, 0.033μF, ± 5%
C206		**ECQM1H104JZ**	Polyester, 50V, 0.1μF, ± 5%
C207		**ECQM1H224JZ**	Polyester, 50V, 0.22μF, ± 5%
C208		**ECEA25Z4R7**	Electrolytic, 25V, 4.7μF
C209		**ECQM1H104JZ**	Polyester, 50V, 0.1μF, ± 5%
C210		**ECQM1H224JZ**	Polyester, 50V, 0.22μF, ± 5%
C211		**ECEA25Z4R7**	Electrolytic, 25V, 4.7μF
C301		**ECCD1H330K**	Ceramic, 50V, 33pF, ± 10%
C401 [EG, EB, XA EF, EH, Ei]	⚠	ECQE2A473MZ	Polyester, 250VAC, 0.047μF, ± 20%
C401 [E, EC, EK XL]	⚠	ECQU2A473MF	Polyester, 250VAC, 0.047μF, ± 20%
C402 [EK, Ei, EH]	⚠	ECQE2A103MZ	Polyeater, 250VAC, 0.01μF, ± 20%

SL-D303

■ PACKINGS



Printed in Japan
81079000 Ⓗ TK/YW